

**REMARKS**

Claims 1, 4-13, 15, 18-26, 30 and 31 are pending in the application.

Claims 1, 4-13, 15, 18-26, 30 and 31 have been rejected.

Claims 1 and 15 have been amended.

Claim 32 has been added.

Applicants acknowledge the Examiner's Advisory Action dated July 24, 2007 ("Advisory Action") received pursuant to Applicant's reply to the Final Office Action, dated July 18, 2007 ("Response to Final").

**Rejection of Claims Under 35 U.S.C. §103**

**Rejection of Claims 1, 15, 30, and 31**

Claims 1, 15, 30 and 31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Publication No. 2005/0108302 filed by Rand et al. ("Rand") in view of U.S. Patent 6,643,671 issued to Milillo et al. ("Milillo"). *See* Final Office Action, pp. 2-9. Applicants traverse this rejection and offer amendments.

**No Interpretation of Rand is Compatible with the Claims**

Regarding independent claims 1 and 15, the Final Office Action and the Advisory Action together present two distinct interpretations of Rand.

As discussed in the Response to Final (*see* p. 7), the Final Office Action interprets Rand such that Rand's backup data volume 122 is equated with the second data volume of claims 1 and 15 and Rand's primary data volume 112 is equated with the first data

volume of claims 1 and 15. *See* Final Office Action, pp. 3-6. However, as discussed in the Response to Final, this interpretation of Rand is not compatible with employing Rand's teachings concerning a generated image, as found in ¶¶ [0006], [0032], and [0035] of Rand, to argue that Rand teaches the limitation of "modifying data of the first data volume while the second data volume is being refreshed to the data contents of the first data volume that existed at time T," as attempted by the Final Office Action. This is due to the fact that ¶¶ [0006], [0032], and [0035] of Rand teach that the generated image is modified, not that data volume 112 is modified. *See* Response to Final, p. 8.

In reaction to the Response to Final, the Advisory Action suggests that Rand be interpreted such that the generated image discussed in ¶¶ [0006], [0032], and [0035] of Rand be equated with the first data volume of claims 1 and 15 while Rand's primary data volume 112 be equated with the second data volume of claims 1 and 15. The Advisory Action states, on page 2, that

The examiner further wishes to Rand clearly teaches modifying a data volume (read/write requests to an image) while another data volume (data volume 112) is being refreshed to the contents of the modified data volume (generated image).

Thus, the Advisory Action argues that employing this interpretation will show that Rand teaches the limitation of "modifying data of the first data volume while the second data volume is being refreshed to the data contents of the first data volume that existed at time T." However, even if employing this interpretation allows the teaching of this limitation to be read into Rand (an assertion the Applicants don't necessarily support), this interpretation is incompatible with the limitation of claims 1 and 15 requiring that "the first data volume is unrelated to the second data volume."

The interpretation of Rand offered by the Advisory Action is incompatible with the limitation of claims 1 and 15 requiring that “the first data volume is unrelated to the second data volume” since Rand’s generated image is *related* to Rand’s primary data volume 112. Rand’s generated image is a point-in-time copy of Rand’s primary data volume 112. (See, for example, ¶ [0030] of Rand, lines 1-3, which state that “[i]n step 502, a virtual representation (i.e., an image) of primary data volume 112 (FIG. 1) at a specified point-in-time is generated.”) The Applicant’s specification states that at least one way in which data volumes become related is that they are point-in-time copies of one another. See ¶ [0010] of Applicant’s specification, for example, which states

Initially, each data volume in the first hierarchy is directly or indirectly related to primary data volume V1. This means, in one embodiment, each data volume in the first hierarchy, other than primary data volume V1, is a PIT or modified PIT copy of either primary data volume V1 or another data volume in the first hierarchy.

Further, the interpretation of Rand offered by the Advisory Action is incompatible with asserting that the limitation of claim 1 of “maintaining first and second data volumes” is taught by Rand. Rand fails to teach that Rand’s generated image is *maintained*. Rand teaches that the generated image is generated a part of a process that begins when a fault is detected with Rand’s primary data volume 112. Thus, Rand’s generated image is not maintained before this process commences. Further, there is no teaching that Rand’s generated image is maintained after this process concludes. Rand’s generated image is used to restore Rand’s primary data volume 112 and to handle reads and writes addressed to Rand’s primary data volume 112 while Rand’s primary data volume 112 is being restored. Once Rand’s primary data volume 112 has been restored all reads and writes are once again addressed to Rand’s primary data volume. Thus, once

Rand's primary data volume has been restored, it appears that Rand has no more use for Rand's generated image, and there is no teaching that the generated image is maintained. See ¶¶ [0029] to [0034] of Rand, along with FIG. 5 of Rand.

Thus, for at least the reason that the interpretations of Rand offered by the Final Office Action and the Advisory Action are incompatible with claims 1 and 15 the Applicants respectfully request the reconsideration and withdrawal of this rejection against claims 1 and 15.

Rand Fails to Teach Limitations of Claims as Amended

In addition, the Applicants have amended claims 1 and 15 to recite the limitation of "modifying data of the first data volume after the second data volume has been refreshed." Under the interpretation of Rand offered by the Final Office Action, Rand fails to teach this limitation. Rand teaches that "when the primary data volume 112 has been restored, read and write requests are satisfied by primary data volume 112." See Rand, ¶ [0033]. Thus, Rand teaches that, once Rand's primary data volume 112 has been restored, it is no longer the case that Rand's generated image is used for read and write requests addressed to Rand's primary data volume 112. Since Rand fails to provide any teaching concerning the use of Rand's generated image after Rand's primary data volume 112 has been restored, Rand fails to teach the limitation of "modifying data of the first data volume after the second data volume has been refreshed."

Thus, for at least the reason that Rand fails to teach the limitation of "modifying data of the first data volume after the second data volume has been refreshed," the Applicants respectfully request the reconsideration and withdrawal of this rejection against claims 1 and 15.

**PATENT**

Since claims 30 and 31 are dependent upon allowable base claims 1 and 15, respectfully, the Applicants respectfully request that the Examiner reconsider and withdraw this rejection against claims 30 and 31.

**Rejection of Claims 4-5, 8-12, 18-19, and 22-25**

Claims 4-5, 8-12, 18-19, and 22-25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Rand et al in view of Milillo et al. as applied to claims 1, 15, 31, and 32, and in view of Veritas article entitled, "Veritas Flashsnap Point-In-Time Copy Solutions," dated June 24, 2002. ("Veritas article"). *See* Final Office Action, pp. 9-19. Applicants traverse this rejection for at least the reason that these claims are dependent upon allowable base claims 1 and 15.

**Rejection of Claims 6, 13, 20, and 26**


Claims 6, 13, 20, 21, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rand et al. in view of Milillo et al. as applied to claims 1, 15, 31, and 32, and in view of U.S. Patent No. 6,691,245 issued to DeKoning ("DeKoning"). *See* Final Office Action, pp. 19-23. Applicants traverse this rejection for at least the reason that these claims are dependent upon allowable base claims 1 and 15.

CONCLUSION

In view of the amendments and remarks set forth herein, the application and the claims therein are believed to be in condition for allowance without any further examination and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the Examiner is invited to telephone the undersigned at 512-439-5093.

If any extensions of time under 37 C.F.R. § 1.136(a) are required in order for this submission to be considered timely, Applicant hereby petitions for such extensions. Applicant also hereby authorizes that any fees due for such extensions or any other fee associated with this submission, as specified in 37 C.F.R. § 1.16 or § 1.17, be charged to Deposit Account 502306.

Respectfully submitted,



Eric A. Stephenson  
Attorney for Applicants  
Reg. No. 38,321  
Telephone: (512) 439-5093  
Facsimile: (512) 439-5099